

Chapter 3

Air Quality

Chapter 3

Air Quality

3.1 Primary Issues

No substantive comments were received that specifically address this section.

3.2 Affected Environment

3.2.1 Regulatory Overview

Comment

Table 3.1 The final Note in this table states that “standards are not to be exceeded more than once per year unless noted”. Noted where?

J. Michael Kuperberg, Ph.D.

Response

As noted in other footnotes to Table 3-1, some of the short-term standards are subject to additional standards as allowed by regulation. For example, the 1-hour SO₂ standard in Washington State is 0.40 ppm, but a 1-hour average of 0.25 ppm cannot be exceeded more than two times in any seven consecutive days (see note “a” in Table 3-1). Similarly, 1-hour ozone exceedances are subject to conditions specified by regulation in Chapter 173-475 WAC (see note “c” in Table 3-1).

Comment

Does this paragraph [page 3-2, 1st paragraph] refer to the primary or secondary PSAPCA limits?

Joel Kuperberg

Response

For those pollutants for which Washington State standards do not exist (e.g., lead, or the 8-hour ozone standard), the primary national standards would apply. For those pollutants for which a national standard does not exist (e.g., 24-hour total suspended particulates), the Washington State standard would apply. In most instances, the Washington State standards are equivalent to or

more stringent than the national standards. The agency you refer to is now known as the Puget Sound Clean Air Agency (PSCAA).

Comment Again, are regulatory standards applicable to a 24 hrs x 7 days per week mining operation proposed for many years of operation that at some points will be within 50 feet of residential land?
J. Michael Kuperberg, Ph.D.

Response The regulatory standards would be applicable to all phases of the proposed operation.

3.2.2 Existing Air Quality

Onsite Monitoring and Other Existing Air Quality Issues

Comment O-1.138 Why was no actual background PM 10 level monitoring done at this site?
Ortman, David

Comment The discussion of the applicability of monitoring station data to the site is interesting. Do outside experts agree with the stated applicability (or lack thereof)? Is the selected comparison value reasonable?
J. Michael Kuperberg, Ph.D.

Response Onsite monitoring of background PM concentrations was not necessary to evaluate impacts associated with the project, since the modeling was based on conservative estimates (i.e., high) of background levels of PM10. If modeling had shown that PM10 would exceed air quality standards with this higher background level, then onsite monitoring may have been warranted. Even assuming higher background PM10 levels, modeling indicated no significant impacts; therefore, onsite monitoring would likely lower the estimated PM10 levels and would not assist in determining impacts and/or identifying mitigation measures.

Background PM10 concentrations used in the analysis were based on an evaluation of data from nearby air quality monitoring stations. Based on these regionally available data that were judged to be most representative of conditions at the project site, a PM10 concentration of $48 \mu\text{g}/\text{m}^3$ was assumed for the background PM10 concentration at the site. As was noted in the DEIS, air quality

monitoring stations are typically located near areas where air quality problems are expected to occur and most often are in urban areas or close to large existing air pollution sources. In this case, background PM10 concentrations were estimated from a monitoring location near Tacoma. As a result, background PM10 concentrations at the site would be lower than those reported at the selected monitoring station located in that more urbanized area. Because of the rural nature of the project site, and the lack of significant PM10 sources in the vicinity, actual background PM10 concentrations are probably lower, resulting in a more conservative analysis of air quality impacts than would be obtained using actual ambient PM10 data. This approach has been used for similar types of projects where onsite monitoring is not necessary.

Comment O-1.141

What were the second-highest 24-hour average for the Kent, and Seattle, South Park sites?
Ortman, David

Response

The second-highest 24-hour average PM10 concentrations for the Kent and Seattle, South Park sites were $74 \mu\text{g}/\text{m}^3$ and $68 \mu\text{g}/\text{m}^3$, respectively. It should be noted that the Kent and Seattle, South Park sites are much more industrial and urbanized than is the Maury Island location. As a result, PM10 concentrations would be higher in those locations than at the Maury Island site.

Comment

Pg. 3-2, para. 3.2.1 states: "In July 1997, the EPA revised particulate matter standards to include particulate matter less than or equal to 2.5 micrometers diameter (PM2.5) because particles of this size were of the greatest concern to health." These are the particles which will fly the most, and are most hazardous. On the basis of the DEIS analysis, anything that flies outside of the mining site is in the PM2.5 range. It is necessary to verify that the most hazardous material does not fly and reach the residents. I suggest that the final EIS require monitoring for PM2.5 at various places in the Gold Beach housing area.
Bob and Madeline Fitch

Response

The comments are noted. At present, PSCAA is collecting data on PM2.5. The EPA PM2.5 standard is presently under legal challenge and is not regulated in Washington State; therefore the standard is not applicable to this project.

3.3 Impacts

3.3.1 Would fugitive dust resulting from the project exceed regulatory standards at the property line or at nearby residential locations?

Air Quality Model

Comment O-1.144

Please explain why EPA's Industrial Source Complex Model was not used to model fugitive dust impacts.

Ortman, David

Comment C-12.009

Where is and who designed the fugitive dust model?

St. George, Brian

Response

The Fugitive Dust Model was selected for the analysis because it is an EPA-approved regulatory model designed specifically for modeling fugitive dust emissions from mining applications and other fugitive sources. Based on discussions with staff from the PSCAA, the EPA, and the Department of Ecology, the Fugitive Dust Model was determined to be the most appropriate model for this project.

A number of air quality models can be used to evaluate fugitive dust impacts. Selection of a model for a particular application is determined by several factors, including the nature of the emission sources, the environmental setting in which the project will occur, the pollutants being evaluated, and the data available to conduct the analysis.

The Industrial Source Complex Model is used to estimate emission concentrations and/or downwind deposition from more industrial sources of air pollution (e.g., stationary industrial facilities). As noted above, after discussions with the relevant agencies, the Fugitive Dust Model was determined to be most appropriate for this project.

Comment

Fig. 3.1 The size of the "Scenario Boxes" dilutes the worst case effect (i.e., property line conditions when the dozer is working 50 feet from the line).

J. Michael Kuperberg, Ph.D.

Response

As noted in Chapter 2 of the FEIS (Description of Proposed Action and Alternatives), active mining would occur in approximately 30-acre phases. The scenarios modeled in the air quality analysis each represented a 30-acre area of excavation when that phase of the project would be nearest to the property lines and offsite residential receptors.

Emission Sources**Comment I-17.018**

Jones & Stokes model apparently assumes ... that only mining operations are capable of generating dust ... model ... ignores the ... impact of loading operations.

Joshua Putnam

Comment

3.5.1 The emissions inventory and modeling exercise should be reviewed by an expert. However, it appears to ignore emissions from barge loading.

J. Michael Kuperberg, Ph.D.

Comment I-17.017

emissions sources exclude the conveyor belt and the dumping of gravel onto barges as a source of particulate emissions. ... these both generate dust ... must also be addressed.

Joshua Putnam

Comment I-7.021

What about dropping gravel several tens of feet onto a metal barge? Wouldn't this be a source of dust emissions?

Michael Meyer

Comment C-8.029

Please provide modeling and adequate discussion of pollutants caused by the heavy duty trucks, equipment on the site (reference to comments made on Lone Star Dupont EIS by USFWS). Provide analysis to show how the worst case PM10 emissions (12 tpy) were calculated.

Ortman, David

Comment

The previously mentioned graders/scrapers are not listed here [page 3-4].

J. Michael Kuperberg, Ph.D.

Comment

Conveyor dust production and vegetation chipping should be included in any computation of the quantity of emissions produced (fugitive dust model).

Ortman, David

Comment 3.4.5 This paragraph [page 3-4, paragraph 5] excludes wood recycling operations; however, chipping of vegetation is proposed as a soil amendment technique.

J. Michael Kuperberg, Ph.D.

Comment 3.8.4 It is interesting that under the No-Action Alternative, the trucks on haul roads are described as producing very small amounts of fugitive dust. In previous scenarios, this factor was one of only two considered. No where are conveyer operations or barge loadings considered.

J. Michael Kuperberg, Ph.D.

Response An inventory was prepared for the project using EPA's "Compilation of Air Pollutant Emissions" to develop equations for the emission sources associated with the project. The major emission sources evaluated spanned all major project activities, including the conveyor system, dropping of materials onto barges, vehicles traveling on unpaved roads, and bulldozers pushing material into the feeder/conveyor system.

Using the emission factor equations, annual emissions were calculated based on the number of pieces of operating equipment and the numbers of days the equipment would be used during the year (see next comment and response).

Vegetation removal and wood chipping would be an infrequent activity limited to initial clearing. As a result, it would not be expected to be a significant component of overall emissions associated with the facility.

Comment How many pieces of equipment operating at the same time were used for emissions projections?

Ortman, David

Response The fugitive dust emission estimates reported in the DEIS were based on worst-case operating conditions for the proposed facility and included:

- loading of 20 trucks per day with a front-end loader;
- batch dropping of material into barges from the conveyor system hoppers and onto trucks;
- operation of four bulldozers at the site moving material for 16 hours per day; and

- movement of 20 haul trucks per day on the site.

These emission estimates were then used as input parameters to the Fugitive Dust Model from which impacts were estimated.

Comment 3.9.3 Were the two roundtrips for the water trucks considered in the haul road scenario?

J. Michael Kuperberg, Ph.D.

Response The modeling scenario assumed a maximum of 20 trucks per day to meet on-island demand for materials. The use of water trucks for wetting roads would be infrequent, depending on the need for dust control. The additional two trucks were not included in the haul road scenario, however, emissions associated with these vehicles would be a small component of overall emissions and would not change the results included in the EIS.

Model Results

Comment 3.6.4 The model should evaluate impacts at the property boundary. The applicants have proposed a 50 foot buffer, but are now attempting to use the neighbors intervening property as a “mixing zone”.

J. Michael Kuperberg, Ph.D.

Response As shown in Table 3-4 of the DEIS, maximum modeled PM10 concentrations are shown both at the property line and at the nearest residences.

Comment A review of the data shows an increase PM10 to 118 $\mu\text{g}/\text{m}^3$ at the property line, and 112-116 at the nearest residence. Such an impact is not acceptable and should be fully discussed.

Ortman, David

Comment Change language to reflect significant impact if PM10 levels are raised at the property line, rather than background concentrations.

Ortman, David

Response This change is not warranted, because a significant impact would occur if PM10 levels were raised *above standards*, and not just raised. As an example, a single car moving down a road can elevate PM10 levels, but not to significant levels.

As noted in Section 3.2.1 of the FEIS, ambient air quality standards are designed to protect human health with an adequate margin of safety. The Fugitive Dust Model was used to estimate maximum (i.e., worst-case) PM10 concentrations at nearby locations when active mining operations would be underway nearest the property lines and nearest to residential locations. Because actual emissions associated with the project (including estimated background concentrations) would be less than the PM10 ambient air quality standard (i.e., the enforceable regulatory standard), no significant air quality impacts are likely.

Comment	Clarify how PSAPCA standards and King Co. Code Ch. 21A.22 apply. Ortman, David
Comment	3.3.3 Is any consideration given to dust other than for health impacts? What about “annoying” dust? J. Michael Kuperberg, Ph.D.
Comment	3.9.1 How do “visible dust” and PM-10 compare? Is the limitation of “visible dust” sufficient? Looking for visible dust seems like a weak criterion for compliance monitoring. Why not actual particulate monitoring? The subsequent language, “could result in a fine and possible shut-down” seems equally weak and in need of clarification. J. Michael Kuperberg, Ph.D.
Response	<p>King County Code Chapter 21A.22 gives the development standards that would apply to mineral extraction activities once the site is fully permitted. Standards established under Chapter 21A.22 to minimize the impacts of extractive operations include requirements for:</p> <ul style="list-style-type: none">▪ adequate review of operating elements of site operations;▪ project phasing to minimize environmental impacts;▪ minimum site areas large enough to provide setbacks and mitigation necessary to protect environmental quality; and▪ periodic review of processing operations to ensure compliance with the most current operating standards. <p>The air quality standards (as adopted by the PSCAA) limit emissions of criteria pollutants from a project. They are the air quality standards that cannot be exceeded except as allowed by the</p>

regulations. In addition to compliance with the ambient air quality standards, the PSCAA would require a Notice of Construction permit for the project to identify air pollution controls at the site. The PSCAA would require the applicant to apply Best Available Control Technology (BACT) to reduce emissions from the site. The basic criterion used by the PSCAA to determine the adequacy of air pollution controls for a fugitive dust source is the prevention of visible dust plumes from leaving the site.

Comment

Jones & Stokes has failed to provide a clear analysis of Taiheijo Cement Corp's proposed action regarding air quality. This section states that dust is the focus of the analysis and other pollutants would be emitted at "relatively" low rates from the tailpipes of trucks and other operating equipment (e.g., dozers). The DEIS fails to even mention air quality impacts from tugs.

Ortman, David

Response

Relative to fugitive dust, other criteria pollutants (sulfur dioxide, carbon monoxide, etc.) would be emitted at low levels because there would be relatively few pieces of operating equipment on the site. A maximum of 20 haul trucks would use the site on a daily basis, along with one front-end loader and up to four bulldozers. This level of equipment use is not sufficient to trigger concerns regarding air quality impacts. With respect to emissions from the operation of tugboats, one tugboat would be required for each barge-loading operation (requiring approximately 5 hours to load a 10,000-ton barge). Therefore, one tug would be maneuvering a barge at the dock at any one time. At a maximum, four such barges could be loaded over the course of a day. Air emissions from mobile sources of pollution, such as operating tugs, are localized very close to the source. The Sandy Shores and Gold Beach communities are approximately 0.5 mile from the dock, and emissions from one tugboat would be insignificant at these distances.

Comment I-17.016

Emissions inventory claims a worst case scenario involves 16 hours per day operations. ... elsewhere the study claims 24 hour operations would be allowed during peak market conditions.

Joshua Putnam

Comment

3.6.2 Would the omitted night time categories represent best or worst case scenarios?

J. Michael Kuperberg, Ph.D.

Comment	Table 3.2 Again, what restricts the applicant to 7.5 MTPY? J. Michael Kuperberg, Ph.D.
Response	The emissions inventory assumed a worst-case annual extraction rate of 7.5 million tons of material, with extraction equipment (e.g., graders and bulldozers) operating for a maximum of 16 hours per day and barges being loaded 24 hours per day. This is a worst-case assumption, since mining levels are likely to be reduced considerably during low demand periods. The rate of material extraction would be a condition of the operating permit.
Comment G-1.0051	The length of the conveyor from the excavation site to the barge may be from 1,200 to 3,400 ft. If 40,000 tons a day is being conveyed, the plume effect will be significant. Conveyor system should be completely enclosed and methods described for taking care of small amounts of spillage and dust. Seattle Council on Airport Affairs
Comment C-4.019	Running fill down the conveyor will create substantial dust. Depending upon conditions, dust will increase turbidity and siltation, and may be driven into nearby communities or farther. There are no provisions for enclosure of the conveyor, dust curtains at the loading point, or other mitigation steps. Vashon-Maury Island Community Council/Thomas McKey
Comment I-17.020	... says nothing about control of dust from the conveyor, or from dumping gravel ... onto the barges. ... What will be done to control this dust? Joshua Putnam
Comment I-17.021	... dumping of gravel from the dock onto barges generated dust that on windy days was visible in the air in Sandy Shores—how will this be addressed? Joshua Putnam
Response	Although it is not likely that visible plumes would be generated due to barge-loading operations, several mitigation measures to further minimize fugitive emissions associated with the barge-loading operations have been included in Chapter 6 of the FEIS. For example, a windscreen could be installed over the section of the conveyor system that passes over water to minimize the potential for material to be blown off the conveyor by wind. Also, the discharge end of the conveyor could be equipped with a down spout, which would minimize the time and distance that the sand and gravel is exposed to wind before landing on the barge.

- Comment O-1.400** 10.4.1.4 p. 10-12 This section states that a “wind rose” will be generated only as part of the monitoring program. The information from a wind rose is essential for both decisionmakers and the public. This information is critical in order to evaluate the environmental impacts from noise carried by wind, from dust carried off site, and marine impacts during barging operations. It is incomprehensible that Jokes & Stokes can not provide critical wind data for this DEIS. No decision can or should be made in the absence of this data. Please provide this data for the EIS (see also 3.3.1, 6.3.2, 7.2.3, and 10.4.1).
Ortman, David
- Comment C-12.009** (in part) Fugitive dust—no mention is made of prevailing winds to indicate impacted areas.
St. George, Brian
- Comment O-1.139** Why did Jones & Stokes fail to gather onsite meteorological data to aid in the analysis of offsite impacts?
Ortman, David
- Comment I-7.022** What about the meteorological data collected on the island for the ASARCO project? Doesn’t this provide site-specific data?
Michael Meyer
- Comment** This is a windy place! It frequently blows in excess of 10 mph from the southwest for days. I have a weather station that continuously displays the current wind velocity and direction and records the date, time, and direction of peak gusts. I can tell you that the choice of 4.5 mph as a condition on which to base impact case analysis is totally inappropriate! This applies to both the dust and the noise analyses.
Bob and Madeline Fitch
- Response** Modeling conducted for the impact analyses relied on very conservative assumptions concerning wind speeds and wind directions that resulted in worst-case impact assessments. High wind speeds tend to disperse pollutants, and thus reduce impacts. Because the worst-case meteorological conditions did not result in significant impacts, the use of actual meteorological data would not change the overall conclusions of the analysis.
-
- Comment O-1.140** This section states that most of the particulate matter emitted from sand and gravel operations is greater in diameter than the coarser particles (PM10). If this is correct, why is there no discussion or analysis of Total Suspended Particulates? If PM10 off site would

range as high as $116 \mu\text{g}/\text{m}^3$, then it would appear that Total Suspended Particulates would likely be in excess of the TSP 24-hour standard of $150 \mu\text{g}/\text{m}^3$. Is this correct?

Ortman, David

Comment

3.2.3 What is the source for the assumption that sand and gravel operations generate particulate matter larger than PM_{2.5}? Is the PM₁₀ fraction assumed to be generated by such operations considered in this section?

J. Michael Kuperberg, Ph.D.

Response

It is not likely that total suspended particulates would exceed regulatory standards because total suspended particulates settle out of the atmosphere much more readily than do the smaller particulates, such as PM₁₀, which tend to stay airborne and disperse over wider areas. In addition, PM₁₀ is important in terms of potential health impacts because particles in this size range can be inhaled deeply into the lungs. PM₁₀ is generated by industrial activities and operations, fuel combustion sources like residential wood burning, motor vehicles, and other sources. For this reason, PM₁₀ is the primary particulate monitored by state agencies, is the constituent evaluated at most mining sites, and was the focus of the air quality analysis.

Comment O-1.142

For comparison purposes, please provide a summary of PM₁₀ readings that have been monitored at any other similar mining site.

Ortman, David

Response

We are not aware of PM₁₀ monitoring results from other mining sites that would have a similar operation to the proposed facility. As noted in the DEIS, the nature of the proposed project is somewhat different than “traditional” mining operations in that the project would provide a relatively uniform product (sand and gravel). As a result, there would not usually be complicated sorting, crushing, processing, or mixing equipment. Therefore, PM₁₀ monitoring data from other mining sites, if it were readily available, would not be relevant to the operation proposed at Maury Island.

Comment O-1.148

p. 3-8 It states that the highest modeled 1-hour PM₁₀ concentration was $180 \mu\text{g}/\text{m}^3$. Under what conditions was this PM₁₀ concentration reached?

Ortman, David

Response The highest modeled 1-hour PM10 concentration was attained with a 1 meter/second wind speed, with winds coming out of the southeast under very stable atmospheric conditions.

Comment O-1.143 Please describe the “worst-case” assumptions for direction and wind speed for each of the Scenarios given on pp. 3-6/3-7.
Ortman, David

Response The direction and wind speed resulting in the worst-case 24-hour average PM10 concentration for each modeled scenario were as follows:

- **Scenario 1:** 118 $\mu\text{g}/\text{m}^3$ with a wind speed of 5 meters/second from the northeast.
- **Scenario 2:** 118 $\mu\text{g}/\text{m}^3$ with a wind speed of 4.5 meters/second from the northeast.
- **Scenario 3:** 119 $\mu\text{g}/\text{m}^3$ with a wind speed of 5 meters/second from the southeast.
- **Alternative 1:** 99 $\mu\text{g}/\text{m}^3$ with a wind speed of 5 meters/second from northeast.
- **Alternative 2:** 83 $\mu\text{g}/\text{m}^3$ with a wind speed of 5 meters/second from the northeast.

Comment O-1.145 pp. 3-6/3-7 This section states that under the three scenarios the total PM10 concentrations (118, 118, 119) would be below the 150 $\mu\text{g}/\text{m}^3$ 24 hour standard. However, these figures are close to 80% of the ambient Air Quality Standards. Therefore, additional model and on-site data must be gathered.
Ortman, David

Response Using worst-case assumptions concerning meteorological conditions, the impact analysis determined that under any of the scenarios modeled, fugitive dust emissions from the operation would not violate applicable air quality standards for PM10. The standards are the threshold of significance, so anything below the standards is not significant under SEPA. Additional mitigation measures for dust control and monitoring are included in the FEIS to address concerns from adjacent residents (see, for example, Chapters 6 and 10).

Comment O-1.146

p. 3-7 It states that average winds will provide better downwind dispersion of fugitive dust than is indicated by modeling of the worst-case 24-hour period. How can Jones and Stokes base this conclusion on “average winds” when they have produced no on-site wind data?

Ortman, David

Response

Air quality modeling for the proposed project was based on a meteorological data set that consisted of all possible wind speed, direction, and stability class combinations. Using this data set ensured that the worst-case combination of wind speed, direction, and stability would be reflected in the model results (i.e., the worst-case impacts associated with the project would be evaluated). Higher wind speeds will disperse fugitive dust more readily than low wind speeds. As a result, average concentrations would likely be less than those reported in the worst-case analysis.

Comment O-1.514

p. 3-7 It states that dust levels would stay below regulatory standards. Does this also mean that no visible dust would leave the site?

Ortman, David

Comment

Is there any consideration given to dust plumes that are not “visible”. Must a dust plume be visible to be considered an impact? Again, what about impacts to the buffer itself? If the buffer is impacted resulting in reduction of the buffer what then?

J. Michael Kuperberg, Ph.D.

Response

The DEIS indicates that PM10 emissions associated with the project would not exceed applicable regulatory standards. Enforcement of pollution controls is the responsibility of the PSCAA which would require that Best Available Control Technology (BACT) be used to reduce air emissions from the site. As noted in the DEIS, the basic criterion used by the agency to determine the adequacy of proposed air pollution controls for a fugitive dust source is prevention of visible dust plumes from leaving the site. If, based upon inspections, the agency did not believe that fugitive dust controls were sufficient, they would issue a Notice of Violation that could result in a fine and shut-down of the facility until the problem is resolved.

Comment O-1.147

4.3.2.1 p. 4-14 This section states that at full operation up to three loaders and four bulldozers would be operation. What is the expected daily air emissions from these sources?

Ortman, David

Response

Daily emissions used to model potential impacts associated with the project are shown in Table 3-3 of the DEIS.

Comment

Table 3.3 If the “Haul Roads” scenario consists of on-island delivery trucks, why does the value change for the different scenarios? Aren’t on-island deliveries considered constant throughout? Why is there no No-Action Alternative here?

J. Michael Kuperberg, Ph.D.

Response

As noted in Chapter 2 of the FEIS (Section 2.2.6, Trucking and Barging) on-island trucking and use of material would stay about the same as current conditions, with trucking activity increasing at an assumed rate of 2.5 percent per year. The annual rate of increase was included in the model and is reflected in the different emission rates associated with the haul roads.

Under the No-Action Alternative, mining activities at the project site would continue as they have for about the past 20 years, with annual production of approximately 20,000 tons. At these low levels of extraction, very small amounts of fugitive dust are created, and therefore air quality impacts would be minimal.

Comment G-5.021

21. What will the particulate count be on Vashon after two or three years of mining at an annual volume of 7.5 million tons? What will the particulate count be at the unloading site and at the using site?

Citizens Against SeaTac Expansion

Comment G-5.022

22. What is the increase in probability of silicosis at the mining site and at the airport site?

Citizens Against SeaTac Expansion

Comment C-7.015

What will be the particulate count on Vashon after two or three years of mining, and at the unloading site and using site? Will residents have to sell their homes and move? What is the increase in probability of silicosis at the mining and airport sites? What increase in water usage to clean windows so people can see when they drive? Will the fill be watered to control particulates? If so,

how much water will be used annually?
Brown, A.

Response

After 2 to 3 years of operation, average annual PM10 concentrations would not be expected to differ substantially from those reported in the DEIS. It is not expected that nearby residents would have to sell their homes as a result of this project. An increase in the probability of contracting silicosis would not be expected as a result of this project since ambient air quality standards are established at levels designed to protect human health with an adequate margin of safety and modeling of emissions did not identify violations of the air quality standards. It is not expected that residences will experience increased water usage rates to clean windows as a result of this project.

The Applicant does not intend routine watering or misting of the mined material as a means of controlling particulates. It is expected that the natural moisture content of the material itself will contribute to controlling particulate emissions. Water would be used only when necessary to prevent permit violations.

Comment O-1.153

It states that a 50-foot-wide vegetated buffer would be maintained around the site. How does a vegetated buffer help with a dust control plan when there is no information given concerning the height or density of the vegetated buffer? Please provide quantifiable information concerning the 50 foot buffer.

Ortman, David

Response

The site is currently forested with dense intervening vegetation. An additional mitigation measure to maintain the proposed buffer in forest has been included in Chapter 5 of the FEIS (Section 5.4.3.2). Intervening vegetation will block dispersion of some particulates, especially those generated at ground level.

3.4 Adverse Impacts and Mitigation

Comment G-1.006

6. Dust control plan. The DEIS proposes that PSAPCA be consulted after these proceedings are terminated to develop a dust-control plan. We very strong urge that these consultations should take place now and that the plan be submitted as an integral part of the FEIS. In light of the health implications of this project, it is irresponsible to shunt this issue to another agency at another time.

The dust-control plan needs to be spelled out in detail in the DEIS. It should include: objectives, methodology, verification of performance, and method of enforcement. When the term “dust-control plan” is used, what is actually meant is, “plan to prevent injury and death to humans resulting from ingestion of arsenic”. If all concerned will make that mental translation when considering this subject, its vital importance may be more evident.

Seattle Council on Airport Affairs

Response

The comments are noted. General components of the dust control plan are discussed in the DEIS. Specific elements of the plan are the responsibility of the PSCAA and would be included as conditions of its operating permit. Mitigation need be evaluated in an EIS only as far as necessary to determine if the mitigation measure (1) is technically and economically feasible and (2) would mitigate the impact (WAC 197–11–660). Since dust control plans are standard for such projects, and since their implementation is monitored by the PSCAA, it is reasonable to assume that such a plan would be feasible and effective if applied to this project.

Comment G-3.009

9. Section 3.4.1 2. Dust Control Plan. The DEIS proposes to control dust with misting from water trucks carrying “5,000 gallons, and during dry conditions, the operation would use about two truckloads per day”. Section 4.3.3.1, Aquifer Recharge and Water Use, further explains that this operation would “increase water consumption on the Island by 0.8 percent.” The source is not identified, but considering the fact some of Vashon’s water purveyors (including the largest, District 19) draw water from salmon-bearing streams, identified sources and an analysis of the impact to anadromous fish would seem in order.

People for Puget Sound

Response

Water would be used only when necessary. Since the material to be mined is essentially wet sand, it is not likely that water would be needed to control dust over the majority of the site. Analysis of impacts due to water use has been included in Chapter 4 of the FEIS, since water is a major concern on Vashon/Maury Island.

Comment O-1.149

It (section 2.2.9) says soils would be scraped. How will Taiheijo Cement Corp. assure that all contaminated soils will be scraped? Does the dust control plan mentioned in Sec. 3.4.1.2. cover the pre-mining site preparation? If not, how will dust control during this

phase of the operation be conducted?
Ortman, David

Comment

Are the cited Air Quality action levels applicable for sites mining contaminated materials adjacent to residential lands?
J. Michael Kuperberg, Ph.D.

Response

Management of arsenic-contaminated soils is discussed in Chapter 10 of the FEIS and includes a discussion of dust control measures as they relate to excavation of contaminated soils. The Applicant has prepared a draft soils management plan that proposes to contain contaminated soils in a lined and covered containment cell located on the north side of the property. The Applicant has also proposed to monitor ambient air quality on the property perimeter during cleanup activities at the site. The objectives of such air monitoring would be to (1) monitor ambient air quality for potential pollutants related to onsite activities, (2) quantify offsite transport of project-related emissions, and (3) assess the effectiveness of onsite emission control methods used during excavation and cleanup activities.

Comment O-1.150

3.4.1.1 pp. 3-8 to 3-9. It states that PSAPCA [now Puget Sound Clean Air Agency] would inspect the site at regular intervals. How often would the Puget Sound Clean Air Agency inspect the site? How many inspectors does the Puget Sound Clean Air Agency have?
Ortman, David

Comment O-1.155

Fugitive Dust/Mitigation: It states that PSAPCA [now called the Puget Sound Clean Air Agency] would inspect the site at regular intervals. What are the specific intervals of inspection?
Ortman, David

Response

Inspection intervals and staffing of the PSCAA are resource issues determined by the agency. The number of inspectors on staff at the agency is variable. King County will consider requiring independent monitoring as a way to monitor project impacts and compliance with all permit requirements.

Comment O-1.152

Has visible dust left the site in the past? Has visible dust left the site of any other Taiheijo Cement Corp. mining operation?
Ortman, David

Response

Given the relatively low level of mining operations that have taken place on the site in the past, it is unlikely that visible plumes have left the site. A determination of visible dust impacts from other mining operations is not applicable to this project since model parameters would differ sufficiently from site to site to prevent meaningful comparison or analogy.

Comment I-17.022

Washing the access road ... what is the source of water for this proposal, how much water would it require, and how would the water be transported to the site?

Joshua Putnam

Comment O-1.158

Fugitive Dust/Mitigation: It states that a manual or automated wheel/vehicle-washing system could be used. How much water would be required for either a manual or automated washing system?

Ortman, David

Comment C-8.022

(repeated in 2.2.3, 3.4.2, 4.3.2, and 10.3.4). Access roads to the site should be paved to prevent dust. Will a washing system for trucks be required, and if so, what requirements will the system have? Where will water be obtained? How will leachate be handled? Provide specifications for the wash down system and discuss monitoring of toxics. Will a monitoring well be placed near the wash down system, and how frequently will monitoring occur? Will the water requirements of this system involve truck traffic? If so, reflect this additional issue.

Vashon-Maury Island Community Council

Response

Paving of the access roads and installation of a wheel washing system could be considered by King County as additional mitigation measures for this project. Water for such a system would be obtained from local sources. Wastewater from such a system would be periodically collected and transported offsite for disposal. Groundwater monitoring would be conducted in accordance with the Groundwater Monitoring Plan prepared for the project.

Comment I-7.023

Are [Jones and Stokes] willing to assume liability and guarantee the effectiveness of these measures?

Michael Meyer

Response The consultant team preparing the EIS would not be required to assume liability for operation of the facility. Liability would be the responsibility of the owner.

Comment G-1.012 12. Monitoring and enforcement. We paid particular attention to provisions for monitoring of air and soil contamination, and for enforcement of safety provisions. In general, we did not find such provisions. There should be provisions for independent air monitoring on and off site. Fixed and mobile air quality monitors should be located at sites where dust levels may be detected. This should include sites up to and including five miles away, and in locations on the mainland. Mobile monitors should be positioned to reflect the location of current excavation activities, adjusted to wind conditions.

Seattle Council on Airport Affairs

Response As noted in the DEIS, the PSCAA has enforcement responsibilities with respect to control of air pollution from fugitive sources. If, based upon inspections, the agency did not believe that fugitive dust controls were sufficient, they would issue a Notice of Violation that could result in a fine and shut-down of the facility until the problem is resolved.

The Applicant has proposed to monitor ambient air quality on the property perimeter during cleanup activities at the site. The objectives of the air monitoring plan would be to (1) monitor ambient air quality for potential pollutants related to onsite activities; (2) quantify potential offsite transport of project-related emissions; and (3) assess the effectiveness of onsite emission control methods used during excavation and cleanup activities.

Comment 3.9.2 Can the permit require more stringent standards?
J. Michael Kuperberg, Ph.D.

Response The National Ambient Air Quality Standards (NAAQS) are the legally enforceable standards applicable to this project.

Comment O-1.157 Fugitive Dust/Mitigation: It states that the portable crushing plant, would be subject to federal New Source Performance Standard limits for dust emissions. What are these standards?
Ortman, David

Comment O-1.154

3.4.1.3. p. 3-10. Does Taiheijo Cement Corp. plan on operating the portable crushing plant at a capacity greater than 150 tons per hour?

Ortman, David

Comment

3.10.1 Will operation of the crusher be restricted to the stated duration?

Joel Kuperberg

Response

The Applicant does not intend to operate the portable crushing plant at a capacity of more than 150 tons per hour. If, however, use of the portable crushing plant did exceed this capacity, then it would be the responsibility of the Applicant to comply with the New Source Performance Standards, as discussed in the DEIS.

If operation of a portable crushing plant triggered New Source Performance Standards, the requirements would be for emissions of particulate matter not to exceed (1) a rate of 0.05 g/dscm (grams/dry standard cubic meter), and (2) an opacity of 7% unless stack emissions are discharged using a wet scrubbing control device.

As discussed in the DEIS, a portable crushing unit would also be subject to a number of source testing and record-keeping requirements.

Comment O-1.156

Fugitive Dust/Mitigation: Why is no mitigation listed for the No-Action alternative, such as (1) minimizing emissions from mined materials by maintaining a relatively high moisture content via water spraying, (2) maintaining a 50-foot-wide vegetated buffer around the site perimeter as required by King County, and (3) permanently stabilizing reclaimed areas by hydroseeding or other procedures?

Ortman, David

Response

No mitigation is presented because no significant adverse impacts would be likely under the No-Action Alternative.

Comment

3.9.5 What is the criteria to define “as soon as mining is complete”. Can mining become complete during the winter?

J. Michael Kuperberg, Ph.D.

Response

Restoration and reclamation are discussed in Chapters 2, 5, and 10 of the FEIS. Reclamation would follow WDNR guidelines in Best Management Practices for Reclaiming Surface Mines in Washington and Oregon (Open File Report 96-2). Specific restoration plans would be developed in the latter phase of each mining stage, according to specifications stipulated by WDNR.

3.5 Cumulative Impacts

No comments were received that specifically addressed this section.

3.6 Significant Unavoidable Adverse Impacts

No comments were received that specifically addressed this section.

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